

WHAT IS CLAIMED IS:

1. An anti-theft apparatus comprising:

an acceleration detection unit mounted on a vehicle for
5 detecting acceleration in a predetermined direction, whose
detection result in a first detection sensitivity is used for
a predetermined vehicle control;

a sensitivity switching unit for switching the detection
sensitivity of the acceleration detection unit to a second
10 detectionsensitivitywhichisdifferentfromthefirstdetection
sensitivity when it received an anti-theft instruction for
instructing prevention of theft; and

a theft judgment unit for judging whether or not the vehicle
is in a theft state on the basis of the detection result of the
15 acceleration detection unit which was switched to the second
detection sensitivity by the sensitivity switching unit.

2. The anti-theft apparatus according to claim 1,
wherein:

20 the sensitivity switching unit switches respective
detectionsensitivitiesofapluralityofaccelerationdetection
units which are mounted on the vehicle when it receives the
anti-theft instruction; and

the theft judgment unit judges whether or not the vehicle
25 is in the theft state on the basis of respective detection results

of the plurality of acceleration detection units.

3. The anti-theft apparatus according to claim 2,
wherein the theft judgment unit judges that the vehicle
5 is in the theft state, in case that acceleration which was detected
by any one of acceleration detection units out of the plurality
of acceleration detection units exceeds a predetermined
threshold value.

10 4. The anti-theft apparatus according to claim 2,
wherein the theft judgment unit judges that the vehicle
is in the theft state, in case that respective accelerations
which were detected by a plurality of acceleration detection
units for detecting acceleration in the same direction out of
15 the plurality of acceleration detection units exceed a
predetermined threshold value.

5. The anti-theft apparatus according to claim 1,
wherein the theft judgment unit judges whether or not the
20 vehicle is in the theft state on the basis of inclination of
the vehicle.

6. The anti-theft apparatus according to claim 1,
wherein the theft judgment unit judges whether or not the
25 vehicle is in the theft state on the basis of vibration of the

vehicle.

7. The anti-theft apparatus according to claim 6,
wherein the theft judgment unit judges whether or not the
5 vehicle is in the theft state on the basis of a detection result
of an acceleration detection unit which was disposed at an outer
edge part of the vehicle.

8. The anti-theft apparatus according to claim 6,
10 wherein the sensitivity switching unit switches each
detection sensitivity in such a manner that the second detection
sensitivity of the acceleration detection unit which was disposed
at a central part of the vehicle becomes higher than the second
detection sensitivity of the acceleration detection unit which
15 was disposed at the outer edge part of the vehicle.

9. The anti-theft apparatus according to claim 1,
wherein the acceleration detection unit is an acceleration
sensor which was disposed in a front collision air bag ECU, an
20 acceleration sensor which was disposed in a side collision air
bag ECU, an acceleration sensor which is used for electronic
control suspension and/or an acceleration sensor which is used
for a vehicle stability control system.

25 10. The anti-theft apparatus according to claim 1,

further comprising

a noise elimination unit for eliminating noise from the detection result of the acceleration detection unit,

wherein the theft judgment unit judges whether or not the vehicle is in the theft state on the basis of the detection result from which noise was eliminated by the noise elimination unit.

11. The anti-theft apparatus according to claim 10, wherein the noise elimination unit eliminates the noise by switching a cutoff frequency of a filter which is additionally disposed in the acceleration detection unit to a frequency which corresponded to theft judgment of the vehicle.

12. The anti-theft apparatus according to claim 10, wherein the noise elimination unit eliminates the noise, by periodically integrating the detection result of the acceleration detection unit.

13. The anti-theft apparatus according to claim 10, wherein the noise elimination unit eliminates the noise by switching a cutoff frequency of a filter which is additionally disposed in the acceleration detection unit to a frequency which corresponded to theft judgment of the vehicle, and by periodically integrating the detection result of the acceleration detection unit.

14. The anti-theft apparatus according to claim 1,
wherein the acceleration detection unit is contained in
a predetermined unit together with various devices, and power
5 is supplied thereto from a battery which was mounted on the vehicle
or a cell which was contained in the predetermined unit, in the
same manner as in the various devices;

the acceleration detection unit includes a power supply
control unit for controlling the power source only to the
10 acceleration detection unit in the predetermined unit; and

the theft judgment unit judges whether or not the vehicle
is in the theft state on the basis of the detection result of
the acceleration detection unit which was controlled so as to
supply the power source by the power supply control unit.

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15. The anti-theft apparatus according to claim 14,
wherein the power supply control unit controls so as to
intermittently supply the power source from the battery or cell
to the acceleration detection unit.

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16. The anti-theft apparatus according to claim 14,
wherein the power supply control unit controls so as to
stop supply of the power source to the acceleration detection
unit, in case that a voltage of the battery or cell became a
25 predetermined voltage and below.

17. The anti-theft apparatus according to claim 1,
further comprising

a monitoring unit for monitoring a state of the vehicle
5 and for sending out the anti-theft instruction,

wherein the sensitivity switching unit switches detection
sensitivity of the acceleration detection unit to detection
sensitivity which is available for theft judgment of the vehicle,
when it receives the anti-theft instruction which was sent out
10 by the monitoring unit.

18. The anti-theft apparatus according to claim 17,
wherein the monitoring unit monitors an ON-OFF state of
an ignition key, and sends out the anti-theft instruction, in
15 case that the ignition key was turned to the OFF state.

19. An anti-theft method comprising:

an acceleration detection step of detecting acceleration
in a predetermined direction, a result of the detection in a
20 first detection sensitivity being used for a predetermined
vehicle control;

a sensitivity switching step of switching the detection
sensitivity of the acceleration detection step to a second
detection sensitivity which is different from the first detection
25 sensitivity when an anti-theft instruction for instructing

prevention of theft was received; and

a theft judgment step of judging whether or not the vehicle is in a theft state on the basis of the detection result of the acceleration detection step which was switched to the second
5 detection sensitivity by the sensitivity switching step.

20. An anti-theft program for having a computer executed an acceleration detection step of detecting acceleration in a predetermined direction, a result of the detection in a
10 first detection sensitivity being used for a predetermined vehicle control;

a sensitivity switching step of switching the detection sensitivity of the acceleration detection step to a second detection sensitivity which is different from the first detection
15 sensitivity when an anti-theft instruction for instructing prevention of theft was received; and

a theft judgment step of judging whether or not the vehicle is in a theft state on the basis of the detection result of the acceleration detection step which was switched to the second
20 detection sensitivity by the sensitivity switching step.

21. An expansion permission apparatus of an air bag for giving expansion permission to an air bag apparatus for expanding an air bag on the basis of a detection result of an acceleration
25 detection unit on the occasion of expanding the air bag,

comprising

an expansion permission judgment unit for judging whether or not expansion of the air bag is permitted on the basis of a detection result of a predetermined acceleration detection unit, the unit using an electronic component which is provided in a control device disposed in a vehicle for carrying out predetermined control which is different from air bag control,

wherein the predetermined control is control unnecessary to be operated, on the occasion that there is a necessity for carrying out the air bag control.

22. An expansion permission apparatus of an air bag for giving expansion permission to an air bag apparatus for expanding an air bag on the basis of a detection result of an acceleration detection unit on the occasion of expanding the air bag, comprising

an expansion permission judgment unit for judging whether or not expansion of the air bag is permitted on the basis of a detection result of a predetermined acceleration detection unit, the unit using an electronic component which is provided in an anti-theft apparatus for preventing a theft of a vehicle.

23. An expansion permission apparatus of an air bag for giving expansion permission to an air bag apparatus for expanding an air bag on the basis of a detection result of an acceleration

detection unit on the occasion of expanding the air bag,
comprising:

a first judgment unit for judging whether or not expansion
of the air bag is permitted on the basis of a detection result
5 of a predetermined acceleration detection unit, the unit using
an electronic component which is provided in an anti-theft
apparatus for preventing a theft of a vehicle; and

a second judgment unit for judging whether or not expansion
of the air bag is permitted on the basis of a detection result
10 of the acceleration detection unit, the unit using an electronic
component which is provided in the air bag apparatus,

wherein the air bag is expanded when expansion of the air
bag is permitted by the first and second judgment unit.

15 24. An anti-theft apparatus mounted on a vehicle that
includes an acceleration detection unit for detecting
acceleration in a predetermined direction, the anti-theft
apparatus comprising

a theft judgment unit for judging whether or not the vehicle
20 is in a theft state on the basis of the detection result of the
acceleration detection unit,

wherein the acceleration detection unit includes a
sensitivity switching unit for switching the detection
sensitivity of the acceleration detection unit to a second
25 detection sensitivity which is different from the first detection

sensitivity.